

Docket: NECG 21.093 (100806-00258)  
Application: 10/815,120

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OCT 10 2006

CLAIMS

*Please amend the Claims as follows:*

1. **(Currently Amended)** A polarizing electrode composed of a carbon composite[[.]]:

wherein, as a carbon material of said carbon composite, a single-layer carbon nanohorn aggregate, which is made in such a manner that the single-layer carbon nanohorns are aggregated spherically, is used; and

wherein said single-layer carbon nanohorn aggregate is supported by a carbon fiber or a carbon nanofiber.

2. **(Original)** The polarizing electrode according to claim 1,

wherein said single-layer carbon nanohorn is a single-layer graphite nanohorn.

3. **(Canceled)**

4. **(Currently Amended)** The polarizing electrode according to claim [[3]] 1,

wherein, by allowing a front end of said single-layer carbon nanohorn composing said single-layer carbon nanohorn aggregate to be fused to said carbon fiber or said carbon nanofiber, said single-layer carbon nanohorn aggregate is supported by said carbon fiber or said carbon nanofiber.

5. **(Withdrawn)** A manufacturing method of a polarizing electrode composed of a carbon composite including a single-layer carbon nanohorn aggregate made in such a manner that the single-layer carbon nanohorns are aggregated spherically as a carbon material, comprising a step of:

obtaining said carbon composite by molding a mixture of said single-layer carbon nanohorn aggregate and a heat fusible and heat hardening phenol resin at 80 - 120 °C, and carrying out a heat treatment in a no-oxidizing atmosphere.

6. (Withdrawn) A manufacturing method of a polarizing electrode composed of a carbon composite including a single-layer carbon nanohorn aggregate made in such a manner that the single-layer carbon nanohorns are aggregated spherically as a carbon material, comprising a step of:

obtaining said carbon composite by molding a mixture of said single-layer carbon nanohorn aggregate, a heat fusible and heat hardening phenol resin, and a heat infusible phenol resin of a weight ratio of 15 to 60 % with respect to the heat fusible and heat hardening phenol resin, and carrying out a heat treatment in no-oxidizing atmosphere.

7. (Currently Amended) An electric double-layer capacitor comprising:

a polarizing electrode[.];

wherein said electric double-layer capacitor comprises a polarizing electrode is composed of a carbon composite including a single-layer carbon nanohorn aggregate made in such a manner that the single-layer carbon nanohorns are aggregated spherically as a carbon material; and

wherein the single-layer carbon nanohorn aggregate is supported by one of a carbon fiber or a carbon nanofiber.

8. (Currently Amended) A polarizing electrode comprising:

a carbon composite including a single-layer carbon nanohorn aggregate, each nanohorn in said aggregate formed of a tube part and a conical part.

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wherein the single-layer carbon nanohorn aggregate is aggregated spherically and each nanohorn in said aggregate has said tube part facing a center of the spherical aggregate and said conical part projecting from a surface of the spherical aggregate as a horn;

wherein the single-layer carbon nanohorn aggregate is supported by one of a carbon fiber or a carbon nanofiber.

9. (New) The polarizing electrode according to claim 1, wherein:

the carbon composite is obtained by mixing the single-layer carbon nanohorn aggregate with a heat fusible and heat hardening phenol resin; and

the mixture is heat treated in a no-oxidizing atmosphere.

10. (New) The polarizing electrode according to claim 9, wherein:

a gap is formed between the single-layer carbon nanohorn aggregate and the phenol resin.

11. (New) The polarizing electrode according to claim 1, wherein:

the carbon composite is obtained by mixing the single-layer carbon nanohorn aggregate with a heat fusible and heat hardening phenol resin and a heat infusible resin;

the mixture is molded so that the heat infusible phenol resin keeps a particle shape; and

the mixture is molded and heat treated in a no-oxidizing atmosphere.

12. (New) The polarizing electrode according to claim 11, wherein:

a gap is formed inside the molded body by carbonizing the heat infusible phenol resin due to the heat treatment

13. (New) The polarizing electrode according to claim 12, wherein:

the carbon composite is impregnated with an electrolyte to become the polarizing electrode.

14. (New) The electric double-layer capacitor according to claim 7, further comprising:

a further polarizing electrode;

an insulated separator having an ion permeability situated between the polarizing electrode and the further polarizing electrode;

a pair of conductive sheets, each sheet disposed at an end surface of each polarizing electrode so as to sandwich these from the opposite sides;

a gasket made in a frame shape arranged surrounding an outer circumference of the polarizing electrode, the further polarizing electrode, and the insulated separator so as to prevent contact between edge parts of the pair of conductive sheets;

an outer terminal attached to each conductive sheet by pressure;

a supporting body arranged at opposite sides of the pair of conductive sheets; and

an epoxy resin coating the outer circumferential surfaces of the gasket and the supporting body so as to fill the gap between the gasket and the supporting body in order to seal an electrolyte.